

Inter (Part-I) 2016

Computer Science		PAPER: I
Time: 2.10 Hours	(SUBJECTIVE TYPE)	Marks: 60

SECTION-I

2. Write short answers to any SIX (6) questions: (12)

(i) What is input device?

Ans The device which is used to give input to the computer is called input device.

(ii) What is a printer?

Ans Printer is used to print characters, symbols and graphics on paper.

(iii) Differentiate between softcopy and hard copy.

Ans Softcopy refers to data stored electronically on a storage device while hard copy refers to the printed output.

(iv) Define ring topology.

Ans This is a network topology. In a ring network, every device has exactly two neighbours for communication purposes. All messages travel through a ring in the same direction. A failure in any cable or device breaks the loop and can take down the entire network. Token passing scheme is used in this topology.

(v) Define workgroup computing.

Ans In a computer network, people can work together as a group even when they are thousands of miles away from each other. This concept of working together is called workgroup computing.

(vi) Define the term token in topology.

Ans This protocol is designed by IBM for its mainframe computers to communicate with the terminals, in a ring topology network.

(vii) How does microwave system work?

Ans Microwaves are high-frequency radio waves that can only be directed in straight lines. For microwave transmissions to be able to occur over larger distance, data messages must be relayed from one location to another using antennas placed at high altitudes usually twenty to thirty miles apart.

(viii) What is encoder?

Ans The encoder converts digital signals to a form, which can pass through transmission medium.

(ix) Define mobile communication.

Ans Mobile communication is radio-based networks that transmit data to and from mobile computer. Computer can be connected to the network through wired ports or through wireless connections.

3. Write short answers to any SIX (6) questions: (12)

(i) What is advantage of using ATM in banks?

Ans The advantage of using ATM in banks is to save the time and convenience for customer.

(ii) Name four applications of document management system.

Ans Following are four applications of document management system:

- | | |
|--------------------|-----------------------|
| 1. Word Processing | 2. Desktop Publishing |
| 3. Reprographic | 4. Image Processing |

(iii) What is control unit?

Ans Control unit reads the instructions from main memory and decodes these instructions.

(iv) Why RAM is used in computer?

Ans RAM is read / write memory. It is used in computer to store all data and instruction of a program while it is being executed.

(v) What is stack pointer register?

Ans The stack pointer register is used to manage the stacks in memory. For example, undo and redo operations in different application softwares are managed by stock.

(vi) Name four operating systems.

Ans Here are four operating systems:

1. Windows
2. Linux
3. Unix
4. DOS

(vii) Define store program computer.

Ans If a computer executes a program in its main memory, we can say, it is stored program computer.

(viii) What is boot sector?

Ans The disk, on which the operating system has been loaded, has a special program in its first sector called the boot sector.

(ix) Who is a hacker?

Ans Hacker is an unauthorized user who takes access to personal data of someone and then uses it to gain some advantage.

4. Write short answers to any SIX (6) questions: (12)

(i) Define user interface.

Ans A user interface is a system which provides a graphical user interface to establish the user communication with the computer.

(ii) What is multitasking?

Ans The capability of an operating system to load multiple programs into memory at one time and to perform two or more processes concurrently, such as printing a document while editing another, is known as Multitasking.

(iii) List any two uses of word processor.

Ans Two uses of word processor are as follows:

1. Preparation of text-based documents.
2. Manipulate text data.

(iv) Write names of two typing modes used in MS-Word.

Ans Following are two typing modes used in MS-Word:
1. Insertion Mode 2. Overtyping Mode

(v) What do you know about indentation?

Ans Indentation comes from indents which determine the distance of each time of a paragraph to margins.

(vi) Write any two benefits of spreadsheets.

Ans Spreadsheet or worksheet is beneficial for:

1. Recording and comparing numerical data.
2. Accounting and budget making.

(vii) Write a function that does total of the cells from A1 to A5.

Ans SUM (A1 : A5)

(viii) List any two negative impacts of internet on society.

Ans Following are two negative impacts of internet on society:

1. Sometimes, it is time-wasting due to the excess usage of some social websites.
2. Due to excess use of internet, the young persons have left the extracurricular activities, e.g., games etc. They are going to be unhealthy day by day.

(ix) Define IP addressing.

Ans Each machine on the internet is assigned a unique address called an IP address. IP stands for internet protocol. A typical IP address looks like this:

216.27.61.137

SECTION-II

Note: Attempt any THREE (3) questions.

5. What are source data-entry devices? Explain three mark and character recognition devices. (2,2,2,2)

Ans Source data entry devices that are used to recognize mark or character and for direct data entry to the computer systems are called Mark and Character recognition devices.

Following are Mark and Character recognition devices:

MICR

OMR

OCR

Magnetic-Stripe Cards

Smart Cards

MICR

MICR stands for Magnetic-Ink Character Recognition. MICR input device is used to read characters, which are printed with magnetized ink. MICR reads the characters printed with magnetic ink and produces digitized signals that enter into the computer as data for further processing. MICR devices are normally used in banks to process customers' cheques.

OMR

OMR stands for Optical Marks Recognition. OMR devices are used to read special marks or symbols printed on the paper. These devices are mostly used to check and process the test marks of SAT and GRE (Graduate Record Examination). The optical recognition system uses a light beam to scan the mark printed on paper, converts it into electrical/digital signals, which is then sent to the computer as input data for processing.

OCR

OCR stands for Optical Character Recognition. OCR device reads or scans preprinted characters in a particular font and converts them to digital code. The OCR device also uses a light source to read the characters printed on the paper. In departmental stores, the OCR devices are commonly used to process utility bills and code of price printed on the products.

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6. Define star topology. Explain its working with diagrams. Also discuss its two disadvantages. (2,3,1,2)
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Ans Star Topology:

In this topology, all computers are connected to a central devices called hub.

Working of Star Topology:

Many home networks use the star topology. A star network features a central connection point called a "hub"

that may be an actual hub or a switch. Devices typically connect to the hub with Unshielded Twisted Pair (UTP) Ethernet. Compared to the bus topology, a star network generally requires more cable, but a failure in any star network cable will only take down one computer's network access and not the entire LAN. If the hub fails, however, the entire network also fails.

Disadvantages:

The main disadvantages of star topology are:

1. It requires more cable as compared to Bus topology. So it becomes more costly.
2. This type of network depends upon the central Hub. If Hub fails, the entire network is failed.

7. Why we need to encode our data in computer systems? Also define and explain EBCDIC code and Unicode in detail. (2,3,3)

Ans Encoding of Data:

The computer works with binary digits only. Therefore, all data, numeric or non-numeric, must be converted into binary digits before the computer can understand it. Computers transmit data in the form of binary codes. Both sender and receiver of the data should have same standard rules for both to understand it.

A coding scheme for communications is a binary system, that is used in the computer systems. The system consists of groups of bits (0 or 1) that represent characters. Some codes use different number of bits such as 5, 7, 8 or 9 to represent that during data communication.

EBCDIC Code:

Extended Binary Coded Decimal Interchange Code is an 8-bit code primarily used by International Business Machine (IBM). This type is intended for efficient transfer between hosts, which use EBCDIC for their internal character representation. For transmission, the data are represented as 8-bit EBCDIC characters. The character

code is the only difference between the functional specifications of EBCDIC and ASCII types.

Unicode:

Universal Code is a 16-bit code and can represent up to 65,536 symbols. Unicode has started to replace ASCII at all levels. It supports a comprehensive set of mathematical and technical symbols to simplify scientific information. With the UTF-8 (Unicode Transformation Format-8) encoding, Unicode can be used in a convenient and backwards compatible way in environments that were designed entirely around ASCII.

8. Define bus. Explain three different types of system buses. (2,2,2,2)

Ans A computer consists of a CPU, Main Memory and I/O unit. These components are interconnected by using a set of parallel lines (Conducting Wires). Each of these lines can be used to transfer a sequence of bits from one component of the computer to the other component. This set of parallel lines is called BUS.

Control Bus:

These lines are used to transmit different commands from one component to the other. For example, if the CPU wants to read data from the main memory; it will use the control bus to send the memory read command to the main memory of the computer. The control bus is also used to transmit other control signals like ACKS (Acknowledgement signals). For example, when CPU give a command to the main memory for writing data, the memory sends an acknowledgement signal to the CPU after writing the data successfully so that the CPU can move forward and perform some more actions.

Data Bus:

On the system bus 32 or 64 lines are reserved to transfer data from one component to the other. These lines are commonly known as the data bus. A 64-line data bus can transfer 64 bits of data simultaneously so it is not

difficult to see that the width of the data bus has a direct impact on the performance of the computer.

Address Bus:

As we know that many components are connected to one another through the system, so it is important to assign a unique ID to each component. This ID is called the address of that component. When a computer component wants to communicate with another, it uses a few of the system bus lines to specify the destination component by using its address. These lines are commonly known as the address bus. Not only the address is used to identify different components of a system but it is also used to specify different memory locations within the main memory.

- 9. Discuss two security threats to data security. Write any four solutions to these threats. (2,2,1,1,1,1)**

Ans Two Security Threats:

1. Some authorized user of the data may unintentionally delete or change sensitive data.
2. Unauthorized users may take access to personal data of someone and then use it to gain some advantage.

Four Solutions to the Threats:

1. The users must be assigned proper rights to minimize such events. Only the authorized users with certain rights may be allowed to delete or modify data after following a step-by-step process.
2. Periodic backup of data should be taken to recover from this sort of situation.
3. Proper password protection should be used to use any resource. A log file should also be maintained to keep track of all the activities on the data / files.
4. Some strong encryption algorithm should be used, so that if someone gets access to the data, he / she should not be able to make any sense out of it.